African Journal of Estate and Property Management Vol. 1 (5), pp. 126-130, May, 2014. Available online at www.internationalscholarsjournals.org © International Scholars Journals

Full Length Research Paper

How to influence housing values: Location, affordability and amenity

Damdeok Tsamos

School of Economics and Management, Xuchang University, Xuchang, Henan, Peoples Republic of China. E-mail: damdeoktsamos@yahoo.com. Tel: +54-0321-5011172.

Accepted 19 February, 2014

During the last ten years, real house prices have increased in China at a rate faster than inflation and job compensation. It is now a conventional wisdom that location, affordability and amenity increase housing values in the neighborhoods and communities they inhabit. But, few existing studies deal with it. This paper aims to report on a study that contributes to the understanding of the roles of location, affordability and amenity on housing values in China. The key findings confirm the general theory and hypotheses. The analysis presents evidence that location, affordability and amenity are positively influenced by housing values. The correlation among location, affordability and amenity are also computed. This research contributes to the understanding of the determinants of housing values in emerging markets like China.

Key words: Housing, affordability, location, amenity.

INTRODUCTION

Recently, housing values has received considerable attention from both academics and practitioners. Some factors influence housing values, such as environmental attributes, urban land value, flooding risk, value of scenic views, effects of mixed land uses, race, new urbanism, inter- metropolitan differentials, period and duration effects, toxic waste sites, aging, property taxation and zoning.

Values of some kinds of housing are explored, such as legal housing titles, desired value, parental housing values and apartment quality. In addition, the policy evidence suggests that housing affordability in China is a pressing social and economic issue, particularly for populations that are marginal to the housing market. For instance, a recent survey (Mak et al., 2007) found that since improvements in living conditions have not kept pace with the territory's economic growth, basic housing situations in urban China restrict the marginalized groups from accessing the housing market. The persistent affordability crisis focuses especially on the accessibility restriction of potential homeowners to the private housing market.

It is also reported that urban homeownership increased dramatically and urban housing conditions improved by almost all accounts, while housing gaps were widening (Yu, 2006). In contrast to a growing body of research concerning the importance of housing values, the issues relating to the determinants and development of a market value of housing are still relatively under-researched.

In addition, most of the research to date has been conducted in the developed countries, mainly in the USA and Europe. Consequently, there is limited knowledge on how housing values is influenced by market factors in China.

In a remarkably short period, China has experienced the process of commercialization of urban housing (Wang and Murie, 1996). Theoretically, China's urban housing reform in the 1980s paved the way for the urban housing market based on the principle of law. The key transformation of urban housing commercialization was carried out in the 1990s. The official ending of the allocation of welfare housing in 1998 marked the establishment of market-oriented urban housing system in China (Wang, 2001). Instead of relying on the state or state-owned enterprises to provide welfare housing, most families in China today must turn to the urban commodity housing market to satisfy their accommodation needs.

China has joined the ranks of homeowner nations in

less than 30 years. Being a so-called open market, China's urban housing market is assumed to be subject to the law of supply and demand for urban housing. But what is the real effect of urban housing supply on urban house prices China? Existing studies have been mainly through a review of macro-aspects of the housing system in China, such as the housing policies (Wang and Murie, 1999), housing consumption (Li, 2007), or an assessment of Chinese housing reform (Tong and Hays, 1996).

The work by some scholars has contributed to demonstrate that the institutional factors are unique to affect Chinese housing consumption and residential crowding (Huang and Clark, 2002; Huang, 2004). Other studies find that industrial structure affects housing values, by acting on the demand side. A recent study explores the role of regional industry structure, focusing especially the role of high-tech, "new economy" sectors on housing values (Landis and Elmer, 2002).

In addition, the literature on Chinese urban housing growth suggests that some institutional factors as well have unique effect on urban housing demand and real housing prices in China. The newly completed urban houses reflect the new housing investment and determine the subsequent housing supply in the urban housing market, which may have a possible effect on urban housing prices (Poterba et al., 1991).

Although, many scholars suggest that China has joined the ranks of housing market nations (Lee, 2000; Shaw, 1997), the urban housing market in China, to some extent, still retains some statism features, such as the state-controlled land market. The close relationship between local government and land development corporation is not a secret in China (Dowell, 1993).

Since housing is an essential requirement for each household, the demand for housing is usually not elastic, but inelastic, in the Chinese social environment (Shaw, 1997). In the model of housing consumption and crowding suggested by Huang (2003), the room stress data is examined against three kinds of factors: changes in demographics; institutional factors; socioeconomic variables.

In another multilevel model using the same housing data, Huang and Clark (2002) suggests that both market mechanisms and institutional forces affect households' tenure choice in urban China. While some recent quantitative analysis on Chinese urban housing market have contributed to explore tenure consumption and residential mobility in big cities of China (Li, 2000; Li, 2003; Lau and Li, 2006), very few studies have focused on the role of location, affordability and amenity in affecting housing price dynamics in China.

This paper aims to contribute to the above under-researched areas by considering the relative impacts of affordability, location, amenity on the development of housing values in China, the largest developing country in the world.

The article begins with a brief review of the literature and then discusses the development of hypotheses. The following section explains the research method and data collection procedures. Thereafter, the results of the data analysis are presented and the final section provides a discussion and conclusion.

RESEARCH DESIGN

From a survey of the literature, various strategies for the investigation of the criteria emerged. Some of the major works have focused only on certain aspects of house quality criteria, leaving other researchers to deal with other criteria. Some researchers have dealt with the non-physical aspects which may include only the locational aspect of house preference, while others have given attention to economic or environmental considerations. Yet others have dealt with the issue by considering only the physical aspect.

There are researchers who have looked at a combination of the different criteria, but this combination is rather limited. A summary of the earlier studies under the various categories is presented subsequently:

Locational attributes: highlights the following attributes: quietness of location; availability of parking spaces; distance to local public transportation; distance to long-distance public transportation; distance to city centre; distance to a bank, and distance to a post office. The effects of natural hazards on urban housing location (Scawthorn et al., 1982), intrametropolitan location of population, employment, and housing (Greenwood and Stock, 1990), residential location choice (Boyce and Mattsson, 1999), race (Krysan, 2008), Subsidized housing policy (Johnson, 2001), loss of a spouse (Bonnet et al., 2010), housing-choice hindrances and urban spatial structure (Zheng et al., 2006), "housing rent", "travel time", and "travel cost" elasticities of location demand (Anas and Chu, 1984). The results are location specific and not extendible to other markets.

Affordable attributes: A wide body of studies has shown that affordability and amenity act as urban pioneers and that their location choices can have substantial upward effects on housing prices (Fisher et al., 2009; Jim and Chen, 2006). But affordability and amenity are relatively small and the evidence of their direct effect on housing prices is limited and anecdotal. Still, the basic idea that affordability and amenity effect on housing prices surely makes for good headlines. Affordable attributes reflects a kind of economic attributes which revealed in the tradeoff situation, housing location preferences were given constrained budgets and asked to 'buy' the most satisfactory location based on housing attributes (Chapman and Ritzdorf, 1986).

Amenity attributes: Several studies have revealed the

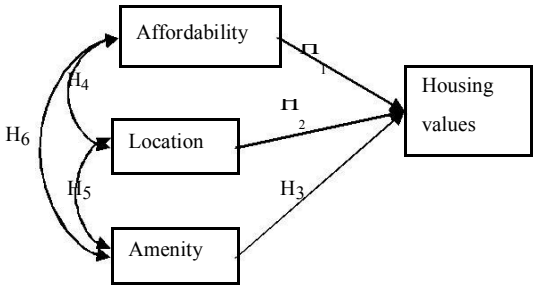

Figure 1. Antecedents of housing value in China.

attributes pertaining to the physical aspects namely: functionality, services, access and circulation, presentation, management, and amenities; environmental impact and overall sustainability; parameters used: thermal comfort, air quality, spatial comfort, privacy, lighting, building noise control, overall satisfaction, ability to do work (Leifer, 1998). Several other studies (Huang and Clark, 2002; Clark, 2003) document the role of amenities and lifestyle-in the form of entertainment, nightlife, culture, and so on-in attracting educated populations, who can pay more for housing. There are reasons to believe that such divergence will continue, affecting not only regional growth levels, but also housing values.

Figure 1 shows a conceptual model depicting the relationships between affordability, amenity, location, and housing values. In this model, location, affordability and amenity are hypothesized as the antecedents to housing values. Following provides a detailed discussion on these hypotheses that make up the model. Therefore, we expect that:

H_1: Housing values is positively influenced by higher level of location.
H_2: Housing values is positively influenced by higher level of affordability.
H_3: Housing values is positively influenced by higher level of amenity.
H_4: Affordability is positively correlated with level of location.
H_5: Location is positively correlated with level of affordability.
H_6: Affordability is positively correlated with level of amenity.

METHODOLOGY

Structural equation models

We use path analysis and structural equations to examine the relationships between variables in the model. In order to analyze the dynamics between this set of variables, structural equation modeling is used. Structural equation models (SEM) may be thought of as an extension of regression analysis and factor analysis, expressing the interrelationship between variables through a set of linear relationships, based upon their variances and co-variances. In other words, structural equation replaces a (usually large) set of observable variables with a small set of unobservable factor constructs, thus minimizing the problem of multi-collinearity.

The parameters of the equations are estimated by the maximum likelihood method. The structural equations model proposed (Figure 1) establishes the relationship between housing values and the following constructs: Affordability, Location and Amenity. It is important to stress that the graphic picture of the structural model (Figure 1) expresses direct and indirect correlations, not actual causalities. Rather, the estimated parameters (path coefficients) provide information of the relation between the set of variables. Moreover, the relative importance of the parameters is expressed by the standardized path coefficients, which allow for interpretation of the direct as well as the indirect effects.

Operation and measurement

The revised instrument contains 9 items addressing various aspect of organizational commitment and is measured on 5 point Likert scale (1 for Strongly Disagree and 5 for Strongly Agree). The second dependent variable in this study is organizational performance, which has been measured on 5 point Likert scale (1 for Strongly Disagree and 5 for Strongly Agree). The instrument contained 3 items, first item relates to increase/decrease of market share relative to previous year, second is concerned with positive/negative change in overall performance of corporation relative to its competitors and finally third item inquires about the increase/decrease in return on investment, return on assets, sales growth, and growth in profit.

A five-stage iterative procedure was followed to refine the existing scales and to develop new scales, including expert review, focus group critique and two rounds of pre-testing. All the scales (except for ownership structure which is nominal, that is, the respondents asked to identify their houses' ownership structure) are measured using five-point Likert type scales, ranging from "not at all" to "very much". Modifications were made taking into accounts of both the specific sector characteristics and Chinese business culture. The degree of government regulations is measured by a five-item scale (Cronbach's a: 0.74) measuring the managers' perception of the adequacy and effectiveness of the current government regulations on product quality, production processes and protection of consumer interests.

Scale validity for each scale was assessed by examining item intercorrelations and item total correlations followed by factor analysis. The scale items of each construct exhibited high and significant item intercorrelations and factors into a single item, thus demonstrating unidimensionality for each measure. Discriminant validity between the constructs was assessed by sequentially fixing the correlations between each pair of constructs to one and comparing the x^2 value for the base model (with all correlations free). In every comparison, the x^2 value for the base model was significantly lower, implying that discriminant validity existed between each pair of constructs.

Data collection

Data collection is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, test hypotheses, and evaluate outcomes. The data collection component of research is common to all fields of study including physical and social sciences, humanities, business, etc. While methods vary by discipline, the emphasis on ensuring accurate and honest collection remains the same. The building dish sample consists of 600 houses drawn randomly.

A questionnaire together with a covering letter and a stamped

Table 1. Antecedents of a housing value: standardised regression coefficients.

Independent variables	Standardized coefficients	T	Sig.
Affordability	0.26	3.67	0.000
Location	0.48	5.85	0.000
Amenity	0.33	6.75	0.000
R^2=0.37	Notes: Adjusted R^2=0.36		

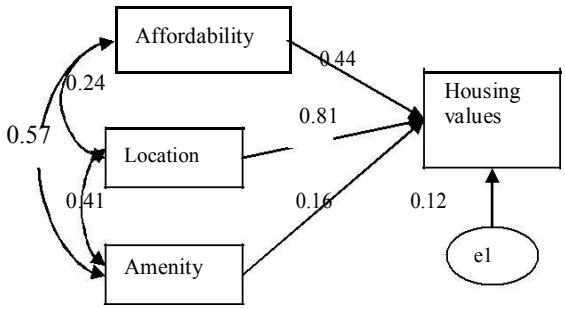

Figure 2. Antecedents of housing value in China.

return envelope was sent out by post to each of the house owners in xuchang, China. A total of 14 houses could not be reached because of incorrect addresses, resulting in an effective base of 586 houses.

With a cut-off date four weeks after the mailing, 143 completed questionnaires were received, resulting in the response rates of 24.4%. Non-response bias in the survey was assessed by comparing the early respondents' (two weeks prior to the cut-off time) and late respondents' value on a number of key variables including affordability, housing values and location.

None of the differences was found to be significant by t-tests, suggesting that the non-response was less likely to be a cause for concern in subsequent analysis.

RESULTS AND DISCUSSION

H_1, H_2 and H_3 were tested by multiple regression analysis and the results are provided by Table 1. A key advantage of multiple regression analysis over its univariate counterparts is the simultaneous assessment of relationships between each independent variable and the dependent measure. In making this simultaneous assessment, the relative importance of each independent variable can be determined.

Support for H_1 in relation to the impact of affordability is found (b=0.26, *p*=0.000), suggesting that Affordability has a direct impact on the housing value and hence demonstrating the positive role Affordability could play in fostering housing value. Support for H_2 in relation to the role of location in developing a housing values is also found (b=0.48, *p*=0.000). The finding suggesting that location in China also realise the importance of responding to the demands and expectations of their stakeholders by developing a higher level of housing values. Similar to H_3, amenity did seem to have a significant importance on housing value.

The data collected was initially fed into SPSS software and transformation of variables was done to make it usable for AMOS. Structural equation modeling technique was used to analyze the data and test hypotheses. The structural equation model technique is an important tool which involves identification of variable and development of theoretical model. Hypotheses are then framed based on theoretical model. Primary data is collected through survey questionnaires and hypotheses are tested on the bases of collected data.

As Figure 2 and Table 2 shows structural equation model results indicating the relationships between location, affordability and amenity, and housing values. The indicators chosen to analyze the goodness of the adjustment are those as the best indicators of absolute and normalized chi-square, root mean square error of approximation (RMSEA) and goodness-of-fit (GFI).

The Chi-squared normalized presents acceptable values when they are between 1 to 3. It used the root mean square error of approximation (RMSEA) instead of root mean square residual (RMSSR) because the models are estimated based on the covariance matrix of the data. This indicator should be situated between the values ranging from 0.05 (good fit) to 0.08 (adjusted acceptable).

GFI is an index of the goodness of the adjustment that represents the total degree of adjustment without a correction for degree of freedom models. High values of this indicator show a good fit, but they are not set minimum acceptable levels.

The findings clearly indicate that the effects of location, affordability and amenity operate independently of those factors as well as in combination with them to affect housing values. Our results convince that the regional concentration of affordability, location and amenity really does matter especially for housing prices - the best indicator we can think of for the effective demand for location, even if it does so in different ways than most people think.

It is also observed that housing values given differ from one city to another depending on the characters particular to the city itself. They tend to reflect the economic and business characters of the city. Likewise, buildings in Xuchang tend to be located at the central business district accessible to major transportation hub. Image, building features with finishes and high technology facilities should become important considerations in the future.

Table 2. Structural equation model results.

Hypotheses	Estimate	S. E.	C. R.	P	Decision
H_1	0.903	0.108	8.374	0.001	Accept
H_2	0.282	0.098	5.620	0.020	Accept
H_3	0.67	0.018	9.301	0.047	Accept
H_4	0.85	0.100	6.392	0.000	Accept
H_5	0.31	0.078	2.321	0.030	Accept
H_6	0.56	0.058	11.471	0.021	Accept

Adjustment Fit:χ^2 Normalized=2,1; RMSEA=0,066; GFI=0,827; AGFI=0,789. All hypotheses were confirmed.

Conclusion

The findings have a number of theoretical as well as practical implications for policy makers, especially those in China. A main theoretical contribution of our study is that it shed lights on the key determinants of housing values in the contexts of China and highlighted the government's role in the development of housing values.

Given the tendency in China to regard all forms of government regulations as excessive and restrictive to competition, therefore, targets for abolishment, a key practical implication of our study to policy makers is that while there is clearly a need to rid the excessive regulations relating to competition, there may also be a case for tightening up the existing regulations or even developing new regulations that address to enhance levels of consumer protection, encourage increases in product quality and generally provide greater incentives for a move towards housing values.

The results reported previously provide some useful insights into issues surrounding the development of housing values in China. However, they are not without limitations. These relate to several areas. First, as an exploratory study, we only examined the impact of three factors. It is recognised that a variety of other factors such as industry type, organisational life cycle, culture and quality of management may also contribute to the housing values.

Therefore, one future research task is to examine the effects of these additional factors on the development of housing values. Secondly, the research design we adopted for this study enables the generation of important insights into the determinants of a housing values but understanding of the change processes involved in improving a housing values is very limited. Future research could usefully adopt a more in-depth and longitudinal design to explore these change processes.

ACKNOWLEDGEMENT

This paper was funded by 2011 natural science funds from Henan province educational department "Evaluation of Henan Residents' housing purchasing power influencing factors and relevant policy research" (2011A790020).

REFERENCES

Anas A, Chu C (1984).Discrete choice models and the housing price and travel to work elasticities of location demand. J. Urban Econ., 15(1): 107-123.

Bonnet C, Gobillon L, Laferrère A (2010). The effect of widowhood on housing and location choices. J. Hous. Econ., 19(2): 94-108.

Boyce D, Mattsson LG (1999). Modeling residential location choice in relation to housing location and road tolls on congested urban highway networks. Transportation Research Part B: Methodol., 33(8): 581-591.

Chapman NJ, Ritzdorf M (1986). A tradeoff method to assess housing location preferences. J. Environ. Psychol., 6(4): 345-358.

Clark TN (2003). Urban Amenities: Lakes, Opera and Juice Bars Do They Drive Development? In: The City as an Entertainment Machine. Res. Urban Policy, 9: 103-140.

Dowell DE (1993). Urban residential redevelopment in the People's Republic of China. Working Paper No. 591. Berkeley: University of California.

Fisher LM, Pollakowski HO, Zabel J (2009). Amenity-Based Housing Affordability Indexes. Real Estate Econ., 37(4): 705-746.

Greenwood MJ, Stock R (1990). Patterns of change in the intrametropolitan location of population, jobs, and housing: 1950 to 1980. J. Urban Econ., 28(2): 243-276.

Huang Y (2003). A room of one's own: housing consumption and residential crowding in transitional urban China. Environment and Planning A. 35(4): 591-614.

Huang Y (2004). Housing markets, government behaviors, and housing choice: a case study of three cities in China. Environ. Plan., 36(1): 45-68.

Huang Y, Clark WAV(2002). Housing tenure choice in transitional urban china: a multilevel analysis. Urban Stud., 39(1): 7-32.

Jim CY, Chen W Y (2006). Impacts of urban environmental elements on residential housing prices in Guangzhou (China). Landsc. Urban Plan., 78(4): 422-434.

Johnson MP (2001). Tenant-based subsidized housing location planning under uncertainty. Socio-Econ. Plan. Sci., 35(3): 149-173.

Krysan M (2008).Does race matter in the search for housing? An exploratory study of search strategies, experiences, and locations. Soc. Sci. Res., 37(2): 581-603.

Landis JD, Elmer V(2002). New Economy Housing Markets: Fast and Furious-But Different?. Hous. Policy Debate, 13(2): 233-274.

Lau KM, Li S (2006). Commercial housing affordability in Beijing, 1992-2002. Habitat Int., 30(3): 614-627.

Lee J (2000). From welfare housing to home ownership: the dilemma of China's housing reform. Hous. Stud., 15(1): 61-76.

Leifer D (1998). Evaluating user satisfaction: case studies in Australasia. Facil., 16(5/6):138-142.

Li S (2000). Housing consumption in urban China: a comparative study of Beijing and Guangzhou. Environ. Plan., 32(6): 1115-1134.

Li S (2007). The road to home ownership under market transition: Beijing, 1980-2001. Urban Aff. Rev., 42(3): 342-368.

Li S(2003). Housing tenure and residential mobility in urban China. Urban Affairs Rev., 38(4): 510- 534.

Mak S WK, Choy L HT, Ho WKO (2007). Privatization, housing conditions and affordability in the People's Republic of China. Habitat Int., 31(2): 177-192.

Poterba JM, Weil DN, Robert S (1991). House price dynamics: the role of tax policy and demography. Brookings Papers Econ. Act., 2: 143-203.

Scawthorn C, Lemura H, Yamada Y (1982).The influence of natural hazards on urban housing location. J. Urban Econ., 11(2): 242-251.

Shaw VN (1997). Urban housing reform in China. Habitat Int., 21(2): 199-212.

Tong ZY, Hays R A(1996). The transformation of the urban housing system in China. Urban Aff. Rev., 31(5): 625-658.

Wang YP (2001). Urban housing reform and finance in China: a case study of Beijing. Urban Aff. Rev., 36(5): 620-645.

Wang YP, Murie A (1996). The process of commercialization of urban housing in China. Urban Stud., 33(6): 971-989.

Wang YP, Murie A (1999). Commercial housing development in urban China. Urban Stud., 36(9): 1475-1494.

Yu Z (2006). Heterogeneity and dynamics in China's emerging urban housing market: two sides of a success story from the late 1990s. Habitat Int., 30(2): 277-304.

Zheng S, Fu Y, Liu H (2006). Housing-choice hindrances and urban spatial structure: Evidence from matched location and location-preference data in Chinese cities. J. Urban Econ., 60(3): 535-557.